VO analysis also indicated that 1,2,4-trichlorobenzene (250 mg/kg) and trichloroethene (10.2 mg/kg) were detected above their applicable RDCSRS in sample PSTF-SS-1. The metals analysis indicated that chromium was detected above 20 mg/kg; however the hexavalent chromium analysis revealed no exceedances of applicable standards. The other contingency analyses indicated that the tested compounds were below applicable standards.

AOC 90 – Drum Compound (QC Lot)

- The LCP 30% and 60% pipeline design phase indicated AOC-90 would be within the area of disturbance; however, the location of the LCP was adjusted at the 90% design phase. An environmental boring (E-20) advanced during the pre-construction sampling event included an environmental sample in this area.
- AOC 90 is identified as a former, rectangular-shaped, drum storage area t in the southwest corner of the Hess property. Two borings, DSQC-SS-1 and DSQC-SS-2 were advanced and one soil sample was collected from each boring and analyzed for EPH, VO, BN, PCBs, and metals. The analyses indicated that metals were the only contaminant suite detected with concentrations above SRSs. In soil sample DSQC-SS-1, chromium was detected above 20 mg/kg. Subsequent hexavalent chromium laboratory analysis did not detect the presence of this metal.
- Ultimately, the LCP did not traverse this AOC.

## 3.3 Pre-Construction Sampling

Prior to performing linear construction activities related to the pipeline installation, pre-construction sampling activities were conducted within the limits of proposed linear construction corridor. A total of six borings were advanced along the approximately 0.75-mile, refined-petroleum products pipeline alignment area. Borings were advanced for both geotechnical evaluation and for environmental analysis. The boring locations were biased towards geotechnical needs (i.e. adjacent to underpasses, rail lines, easements, roads, etc.) as well as towards areas of potential environmental impacts, based on the due diligence review. The geotechnical data was reviewed for construction considerations, which is beyond the scope of this report. The environmental samples were collected to determine the presence or absence of contamination within the limits of the proposed construction activities. The main

purpose for the collection of the environmental data was to address future worker safety during construction and to develop a Materials Management Plan (MMP).

The following environmental pre-construction sampling work scope was performed:

- Soil samples were advanced using hollow-stem auger methods and samples were collected utilizing decontaminated split-spoon samplers. SGS Drilling, a NJ-licensed driller, was selected to perform these borings in conjunction with the geotechnical field work. The soil within the split spoons was screened by a Langan scientist with a photo-ionization detector (PID) in 6-inch intervals. Discrete samples were collected at the depth corresponding with the base of the proposed pipeline (approximately 6 to 10 feet below ground surface (bgs)), with additional samples proposed to be collected at the depth corresponding with the highest contamination, based on visual, olfactory or field screening readings (if present).
- Analytical soil sampling parameters included US Environmental Protection Agency (USEPA) Target Compounds per N.J.A.C.7:26E-2.1(c)1: Target Compound List plus TICs/Target Analyte List (TCL+TICS/TAL), hexavalent chromium, EPH, and pH. Samples were also analyzed for waste classification, including Full TCLP analysis and RCRA ccharacteristics. These sampling parameters and frequencies were established for the evaluation of worker safety conditions as well as for pre-characterization for waste disposal.
- If groundwater was encountered in the boreholes at the anticipated construction depth, grab groundwater samples were collected to assess waste management needs. Groundwater sampling locations were biased towards known contaminated areas, or based on elevated field readings. Analytical parameters for groundwater included USEPA Target Compounds per N.J.A.C.7:26E-2.1(c)1: TCL+TICS/TAL, hexavalent chromium, EPH, and pH.
- The groundwater investigation consisted of installing and sampling temporary groundwater monitoring well points at areas where groundwater was detected at the anticipated construction depth. Analysis of TAL metals included a lab-filtered and unfiltered sample from the temporary points. Grab groundwater samples were collected using disposable Teflon-lined dedicated bailers for each well point. The temporary well points were not developed or purged prior to sampling, therefore, stability parameters were not collected during sampling.

- Decontamination procedures were employed for quality control purposes, and included the use of certified, decontaminated items such as split spoon cores, disposable scoops for sampling, dedicated tubing and cleaned groundwater sampling equipment, and laboratory cleaned bottleware. Equipment used was decontaminated with laboratory-grade glassware detergent. Langan acquired sampling equipment from an elected environmental equipment company and a New Jersey-certified laboratory.
- Any excess soil or groundwater generated during the investigation was placed in Department of Transportation (DOT)-approved 55-gallon drums. The drums were temporarily stored on Buckeye property, under the direction of the geotechnical engineer Golder. Drummed wastes were handled by Golder for off-site disposal.

A Quality Assurance Project Plan (QAPP) was prepared to support quality assurance and quality control during environmental sampling activities. Langan produced the QAPP in accordance with the NJDEP's *Quality Assurance Project Plan Guidance* dated April 2014. The QAPP is included in Appendix B.

**Environmental Investigation Results**

A total of six soil samples (E-17 to E-22) and two groundwater samples (E-19 and E-20) were collected between July 13 and July 18, 2016. The results of the pre-construction environmental investigation are provided in Tables 1 and 2. A summary of the results, including the sample location, which reflects both the Golder geotechnical (SB-XX) and Langan environmental (E-XX) boring IDs, sample collection date, sampling depth at the construction interval, and analytical parameters are featured in the tables. Based on the encountered depth to water in the subsurface (approximately 8 to 10 feet bgs), the temporary monitoring wells were installed with a groundwater screening interval of 5 to 15 feet bgs.

Figure 4 depicts the soil boring and environmental sample locations. A discussion of these results is provided below.

*Soil Results*

A total of six soil samples were collected from depths ranging from 5-7 feet bgs to 9-11 feet bgs. The results indicate there were no exceedances of the NJDEP's RDC or NRDCSRS (N.J.A.C. 7:26D). The pesticide dieldrin was detected at a concentration exceeding the NJDEP's Impact to Groundwater Soil Screening Levels (IGWSSL) in SB-